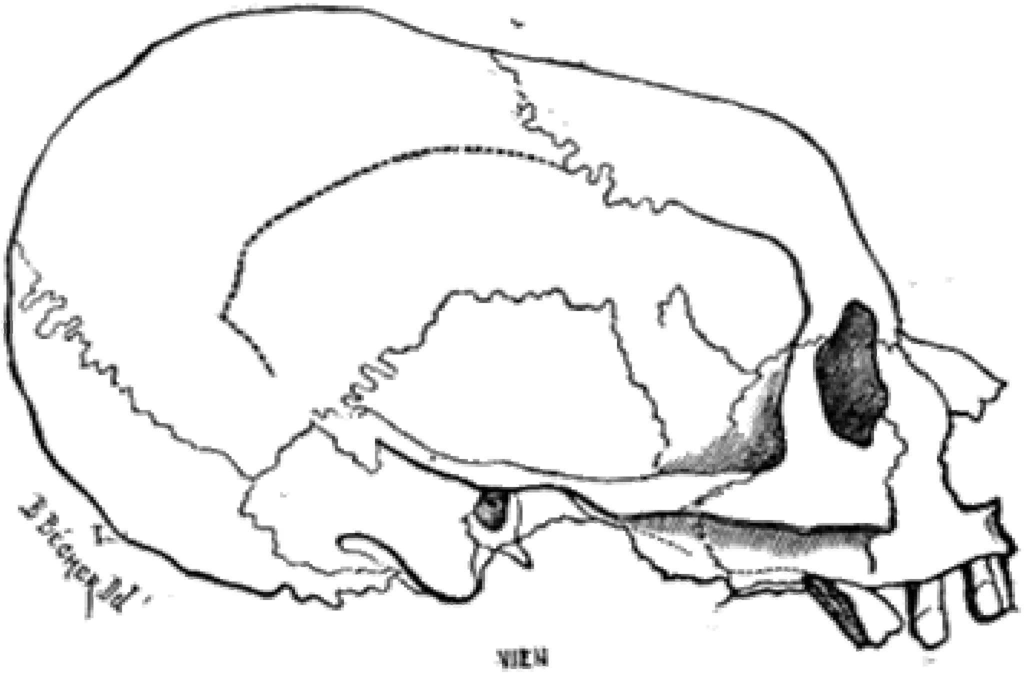
“The Skull and Brain of a Man Afflicted with the Toulousian Deformation”

by Doctor Paul Broca

ANTHROPOLOGY SOCIETY OF PARIS
Meeting of June 5, 1879

Robert K. Stevenson: Translator and Editor



Skull of old man possessing the Toulousian deformation

“The Skull and Brain of a Man Afflicted with the Toulousian Deformation”

Today I shall present from the hand of Monsieur Nélaton, a resident medical student in the service of Doctor Richet at the main hospital, the skull and brain of a 60-year-old man, upon whom an autopsy was performed this morning; this man was born in Albi (Tarn), but his head is deformed ***à la Toulousaine***. The Volcae-Tectosages, from whom we attribute the importance of this deformation, has their capital in Toulouse and supposedly, according to the maps, had only extended themselves as far as the Agout River, which is 8 leagues from Albi. But, we believe, from the manner in which they had ushered themselves into the country, that they were able to extend themselves much further, even into Aveyron (where examples of their presence are known).

In an odd coincidence another man, 37 years of age and afflicted with the same deformation, died this morning in the main hospital; he was also born in the department of Tarn, but on the border of Haute-Garonne and in the territory of the ancient Tectosages.

You recall, messieurs, that in April, 1871 I performed an autopsy on an old Toulousian whose skull and brain cast are now deposited in our museum. Today’s autopsy is therefore the second that has been performed on such an individual, and it confirms the results of the first as well as supports the opinion sustained for 130 years by the Toulousian physicians specializing in mental disorders.

The Toulousian deformation had been widely regarded with indifference, and remained ignored until physicians working in the lunatic asylums of this region noted that the percentage of deformed persons was much more considerable in the population of their asylums than in the at large population. They concluded, with reason, that the practice of placing caps tightly on the heads of infants was dangerous for the intelligence; they then undertook a sort of crusade, after which most families in this region renounced the employment of child’s caps, having now understood that such caps could deform in a harmful manner the head of young children.

Regarding the Toulousian that I autopsied in 1871, I described at the time the pathological adherence of the dura mater with the skull’s inner lining. Usually, to remove the brainpan of the skull, one makes a cut with a circular saw, after which one detaches the brainpan without any difficulty, drawing it off by means of a small hook. When I tried to perform this particular operation on the Toulousian, the brainpan did not surrender itself, and when I sought out the obstacle that was causing the resistance, I saw that it was the dura mater which was adhering very strongly to the skull and which would not be able to be detached with ease. Upon further investigation I saw that this membrane was threatening to tear; so, I cut it all round about the side where it was adhering. This adherence was obviously due to an old malady that enveloped the brain.

Now, the same difficulty occurs when you do an autopsy on the 60-year-old individual that I have chosen to present to you today, whose skull here has been prepared for examination. As you can see, traces of adherence of the dura mater are readily visible; at this level of the skull we observe a great number of small depressions (which I'm now delineating with a needle), from the bottom of which the dura mater is intimately adherent to the skull.

So, artificially deforming an infant's head is no innocuous process, as it is often described, even with regard to the much more violent deformations performed by various South American peoples. We do not know at what point it became injurious to the two individuals whose autopsy I have described, but one thing is certain: with both of them it brought about a lesion that beset the brain and skull.

The exterior form of the subject's skull, the main pieces of which we have before our eyes, is as follows: the forehead slopes up to the frontal bosses without being very deformed. Proceeding on from this point, it is extremely depressed and sunken all the way up to the bregma, and, as you can see, the head terminates in kind of a sharp peak.

The frontal lobes of the brain are so significantly deformed that their existence is not evident from the exterior aspect of the skull; indeed, messieurs, their anterior part is very depressed. They regain in length part of what they have lost in height, causing the Rolandic fissure to be compressed toward the back; however, notwithstanding this parietal compensation their relative volume is much smaller than the normal state. The occipital lobes, on the contrary, possess an exaggerated volume, while the parietal lobes are quite reduced in their upper, external part.

The Toulousian deformation therefore modifies in a most considerable manner the relative development of the various lobes of the brain. These same facts have been verified by the partial weighings that I made on the brain of the Toulousian of 1871.

DISCUSSION

Monsieur ANTOINE D'ABBADIE. This custom native of the region of Toulouse of deforming the head of infants was certainly practiced with more frequency formerly than it is today. Yet, we do not see that this region is particularly remarkable for the number of its madmen; the contrary situation prevails in some other regions, and especially in the village of Guipuzcoa, where lunatics—one does not know for what cause—are prodigiously numerous. Toulouse, on the other hand, produces distinguished men—notable the mathematician Fermat—and the Toulousian population is intelligent.

Doctor JULES LUNIER. I would like, messieurs, to present to the Society this map which shows the distribution of mental illness in France; as you can see, the department of Haute-Garonne is one of those where lunacy claims the most victims. It is conspicuous with regard to other departments of southern France, where lunacy only manifests itself rarely.

Doctor PAUL BROCA. The fact that you cited, Monsieur d'Abbadie, of a village containing an abnormally high number of lunatics without anyone knowing why this is the case can no doubt be explained by heredity alone, for there are few maladies more hereditary than lunacy. Fortunately, Monsieur Foville of Saint-Yon has shown that families struck by this malady have a propensity to die off.

As for the existence of distinguished men originating from Toulouse, this is well know and is not in contradiction with what I have previously stated. Besides the fact that the deformation custom has never been universally adopted in Toulouse, it is probably that the intelligent families, those where the men of merit generally come from, are bound the most often to be opposed to the application of a usage so absurd and uncouth; it therefore will be useful to know if the great mathematician Fermat had or did not have a deformed skull. Moreover, one can imagine that certain intellects are able to escape or resist the dangers that run with artificial deformation.

I must add that the population of Toulouse is much more artistic and literary than scientific. It is Toulouse, for example, which gave birth to the celebrated Floral Games; its people, even down to the lowest stratum, are excited and impassioned by poetry and music. These personal qualities are not incompatible with the relatively lesser development of the frontal lobe, because they are quite often in evidence among the Toulousians who possess a deformed skull.